NORTH DAKOTA
DEPARTMENT of HEALTH

ENVIRONMENTAL HEALTH SECTION
Gold Seal Center, 918 E. Divide Ave.
Bismarck, ND 58501-1947
701.328.5200 (fax)
www.ndhealth.gov

February 23, 2015

Mr. Tommy Janik
Paradigm Energy Partners, LLC
545 E John Carpenter Freeway, Ste 800
Irving, Texas, 75062

Re: Air Pollution Control
Permit to Construct

Dear Mr. Janik:

Pursuant to the Air Pollution Control Rules of the State of North Dakota, the Department of Health has reviewed your permit application submitted January 2, 2015 to obtain a Permit to Construct for a Petroleum Terminal in McKenzie County.

Enclosed is a copy of the Department's Air Quality Effects Analysis for the Keene Terminal, along with a draft copy of the Permit to Construct. Before making final determinations on the permit application, the Department of Health must solicit public comment by means of the enclosed public notice. As indicated in the notice, the public comment period will begin on February 27, 2015 and end on March 29, 2015.

All comments received will be considered in the final determination concerning issuance of the permit. The Department will take final action on the permit application within thirty days after the end of the public comment period. You will be notified in writing of our final determination.

If you have any questions, please contact me at (701)328-5188 or rkautzman@nd.gov.

Sincerely,

Rheanna Kautzman
Environmental Scientist
Division of Air Quality

RK:saj
Enc:
xc: Mike Owens, EPA (email)

NOTICE OF INTENT TO ISSUE AN
AIR POLLUTION CONTROL
PERMIT TO CONSTRUCT

Take notice that the North Dakota Department of Health proposes to issue an Air Pollution Control Permit to Construct to Paradigm Energy Partners, LLC in accordance with the North Dakota Air Pollution Control Rules. The project involves the construction of a Petroleum Terminal to be located in McKenzie County.

Preliminary evaluations made by Department staff indicate that the project will comply with all applicable Air Pollution Control Rules and there will be no significant detrimental effects to air quality.

A 30-day public comment period for the proposed permit will begin February 27, 2015 and end on March 29, 2015. Direct comments, in writing, to the North Dakota Department of Health, Division of Air Quality, 918 E. Divide Avenue, Bismarck, ND 58501-1947. Comments must be received during the public comment period to be considered in the final permit determination.

A public meeting regarding issuance of the Permit to Construct will be held if a significant degree of public interest exists as determined by the Department. Requests for a public meeting must be received in writing by the Department before the end of the public comment period. The application, Department analysis and draft permit are available for review at the above address and at www.ndhealth.gov/AQ/Notices.htm. A copy of these documents may be obtained by writing to the Division of Air Quality or contacting Rheanna Kautzman at (701)328-5188 or by email at rkautzman@nd.gov.

Dated this 23rd day of February 2015

Terry L. O'Clair, P.E.
Director
Division of Air Quality

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AIR POLLUTION CONTROL PERMIT TO CONSTRUCT

Pursuant to Chapter 23-25 of the North Dakota Century Code, and the Air Pollution Control Rules of the State of North Dakota (Article 33-15 of the North Dakota Administrative Code), and in reliance on statements and representations heretofore made by the owner designated below, a Permit to Construct is hereby issued authorizing such owner to construct and initially operate the source unit(s) at the location designated below. This Permit to Construct is subject to all applicable rules and orders now or hereafter in effect of the North Dakota Department of Health and to any conditions specified below:

I. **General Information**:

A. **Permit to Construct Number**: PTC15005

B. **Source**:

1. Name: Paradigm Energy Partners, LLC
2. Location: Keene Terminal
   SE ¼, SE ¼, Sec. 22, T151N, R96W
   McKenzie County, North Dakota
3. Source Type: Petroleum Terminal
4. Equipment to be built at the Facility:

Emission Unit Description	Emission Unit (EU)	Emission Point (EP)	Air Pollution Control Equipment
Configuration 1 only*: Sixty 400 bbl crude oil tanks	TANK01 through 60	FLARE01	Submerged Fill Pipe, Combustor
Configuration 2 only*: Ten 400 bbl crude oil tanks	TANK01 through 10	FLARE01	Submerged Fill Pipe, Combustor
Configuration 2 only*: Two 20,000 bbl truck unloading tanks (Kb)	UNLD01 through 02	UNLD01 through 02	Submerged Fill Pipe, Internal Floating Roof
Truck Loading	TRUCK01	FLARE01	Vapor Balance Line and Combustor
220,000 bbl shipping tank (Kb)	ST1	ST1	Submerged Fill Pipe, Internal Floating Roof
220,000 bbl shipping tank (Kb)	ST2	ST2	Submerged Fill Pipe, Internal Floating Roof

Emission Unit Description	Emission Unit (EU)	Emission Point (EP)	Air Pollution Control Equipment
220,000 bbl receipt tank (Kb)	RT	RT	Submerged Fill Pipe, Internal Floating Roof
220,000 bbl crude oil tank (Kb)	OT01	OT01	Submerged Fill Pipe, Internal Floating Roof
220,000 bbl crude oil tank (Kb)	OT02	OT02	Submerged Fill Pipe, Internal Floating Roof
220,000 bbl crude oil tank (Kb)	OT03	OT03	Submerged Fill Pipe, Internal Floating Roof
Combustor pilot	FLARE01	FLARE01	None
Emergency generator engine rated at 755hp, fired on NG, propane, LPG, or field gas.	GEN01**	GEN01	Catalytic Converter
Fugitive Emissions	FUG01	FUG01	None

* The facility may either construct the equipment listed in configuration 1 or configuration 2, but may not construct both configurations.

** The potential-to-emit for an emergency generator engine is based on operation no more than 100 hours per year for non-emergency uses [40 CFR 63, Subpart ZZZZ, §63.6640(f)]

C. **Owner/Operator (Permit Applicant)**:

1. Name: Paradigm Energy Partners, LLC
2. Address: 545 E John Carpenter Freeway, Ste 800
   Irving, TX 75062
3. Application Date: January 2, 2015

II. **Conditions**: This Permit to Construct allows the construction and initial operation of the above-mentioned new or modified equipment at the source. The source may be operated under this Permit to Construct until a Permit to Operate is issued unless this permit is suspended or revoked. The source is subject to all applicable rules, regulations, and orders now or hereafter in effect of the North Dakota Department of Health and to the conditions specified below.

A. **Emission Limits**: Emission limits from the operation of the new equipment identified in Item I.B of this Permit to Construct (hereafter referred to as "permit") are as follows. Source units not listed are subject to the applicable emission limits specified in the North Dakota Air Pollution Control Rules.

Emission Unit Description	EU	EP	Pollutant / Parameter	Emission Limit
Generator	GEN01	GEN01	Opacity	20% (40%*)
Flare	FLARE01	FLARE01	Opacity	20% (60%*)

* Permissible for not more than one six-minute period per hour.

B. **Fuel Restriction**: The engines are restricted to combusting only propane, LPG, field gas, or natural gas containing no more than 2 grains of sulfur per 100 standard cubic feet.

C. **Product Throughput Limits**: The amount of total crude oil or crude oil condensate combined shall not exceed the following throughput totals per any 12-month rolling period.

Emission Unit Description	EU	Operational Limit
Configuration 1 only: Sixty 400 bbl crude oil tanks	TANK01 through TANK60	Maximum total throughput of 17,520,000 bbl (735,840,000 gallons) of crude oil per year for all 400 bbl storage tanks (combined).
Configuration 1 only: Truck Loading	TRUCK01	Truck crude oil output into trucks limited to 500,000 bbl (21,000,000 gallons) per year.
Configuration 2 only: Ten 400 bbl crude oil tanks	TANK01 through 10	Maximum total throughput of 2,190,000 bbl (91,980,000 gallons) of crude oil per year for all 400 bbl storage tanks (combined).
Configuration 2 only: Two 20,000 bbl truck unloading tanks (Kb)	UNLD01 through 02	Maximum total throughput of 21,900,000 bbl (919,800,000 gallons) of crude oil per year for all 20,000 bbl storage tanks (combined).
Configuration 2 only: Truck Loading	TRUCK01	Truck crude oil output into trucks limited to 2,190,000 bbl (91,980,000 gallons) per year.
220,000 bbl shipping tank	ST1	Maximum total throughput of 80,300,000 bbl (3,372,600,000 gallons) of crude oil per year.
220,000 bbl shipping tank	ST2	Maximum total throughput of 109,500,000 bbl (4,599,000,000 gallons) of crude oil per year.
220,000 bbl receipt tank	RT	Maximum total throughput of 80,300,000 bbl (3,372,600,000 gallons) of crude oil per year.
220,000 bbl crude oil tank	OT01	Maximum total throughput of 36,500,000 bbl (1,533,000,000 gallons) of crude oil per year.
220,000 bbl crude oil tank	OT02	Maximum total throughput of 36,500,000 bbl (1,533,000,000 gallons) of crude oil per year.

Emission Unit Description	EU	Operational Limit
220,000 bbl crude oil tank	OT03	Maximum total throughput of 36,500,000 bbl (1,533,000,000 gallons) of crude oil per year.

D. **Monitoring, Recordkeeping and Reporting Requirements**: By the 15th day of each month, the owner/operator must record the crude oil or crude oil condensate barrels of throughput for the previous month and for the previous 12 month period (12-month rolling total) for the emission units listed in II.C. These records will be kept for a period of at least five years. The department shall be notified by the 15th day of the month in which the calculation was made anytime a throughput exceeds a limit in any rolling 12-month period.

E. **Flaring Restrictions**:

1. Flaring may not be used to burn waste gas for the purpose of increasing or maintaining well production without prior approval from the Department. When it is necessary to operate the flare during emergency, malfunction or maintenance, all precautions shall be taken to minimize emissions and maintain compliance with the applicable ambient air quality standards as outlined in NDAC 33-15-02 and the opacity standard of 20% not to exceed 60% for more than one six-minute period per hour.

2. The flare must be equipped and operated with an automatic ignitor or a continuous burning pilot which must be maintained in good working order as outlined in NDAC 33-15-07-02.

3. The presence of a flame shall be monitored using a thermocouple or any other equivalent device approved by the Department.

F. **Like-Kind Engine Replacement**: This permit allows the permittee to replace the existing engine with a like-kind engine. Replacement is subject to the following conditions:

1. The Department must be notified within 10 days after change-out of the engine.

2. The replacement engine shall operate in the same manner, provide no increase in throughput and have equal or less emissions than the engine it is replacing.

3. The date of manufacture of the replacement engine must be included in the notification. The facility must comply with any applicable federal standards (e.g. NSPS, MACT) triggered by the replacement.

4. The replacement engine is subject to the same state emission limits as the existing engine in addition to any NSPS or MACT emission limit that is applicable. Testing shall be conducted to confirm compliance with the emission limits within 180 days after start-up of the engine.

G. **40 CFR 63, Subpart ZZZZ**: The owner/operator shall comply with all applicable requirements of 40 CFR 63, Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines. For this subpart, EPA Region 8, not the North Dakota Department of Health, is the implementing and enforcement authority. The permittee shall submit all documentation to EPA at the address listed below:

U.S. EPA Region 8
1595 Wynkoop Street
Mail Code 8ENF – AT
Denver, CO 80202-1129

H. **40 CFR 60, Subpart JJJJ**: The owner/operator shall comply with all applicable requirements of 40 CFR 60, Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines.

I. **40 CFR 60, Subpart OOOO**: The owner/operator may be subject to the requirements of 40 CFR 60, Subpart OOOO - Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution. EPA Region 8, not the North Dakota Department of Health, is the implementing and enforcement authority. The permittee shall submit all documentation to EPA at the address listed above.

J. **New Source Performance Standards (NSPS) for Storage Tank(s)**: The owner/operator shall operate the storage tank(s) in accordance with the following applicable requirement:

40 CFR Part 60, Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (including Petroleum Liquid Storage Vessels) for which Construction, Reconstruction or Modification Commenced after July 23, 1984, as incorporated by reference into NDAC Chapter 33-15-12.

K. **Storage Tanks**: All tanks shall be equipped with a submerged fill pipe in accordance with NDAC 33-15-07-01.3.

L. **Organic Compounds Emissions**: The permittee shall comply with all applicable requirements of NDAC 33-15-07 – Control of Organic Compounds Emissions.

M. **Construction**: Construction of the above described facility shall be in accordance with information provided in the permit application as well as any plans, specifications and supporting data submitted to the Department. The Department

shall be notified ten days in advance of any significant deviations from the specifications furnished. The issuance of this Permit to Construct may be suspended or revoked if the Department determines that a significant deviation from the plans and specifications furnished has been or is to be made.

Any violation of a condition issued as part of this permit to construct as well as any construction which proceeds in variance with any information submitted in the application, is regarded as a violation of construction authority and is subject to enforcement action.

N. **Startup Notice**: A notification of the actual date of initial startup shall be submitted to the Department within 15 days after the date of initial startup of the engines.

O. **Permit Invalidation**: This permit shall become invalid if construction is not commenced within eighteen months after issuance of such permit, if construction is discontinued for a period of eighteen months or more; or if construction is not completed within a reasonable time.

P. **Fugitive Emissions**: The release of fugitive emissions shall comply with the applicable requirements in NDAC 33-15-17.

Q. **Annual Emission Inventory/Annual Production Reports**: The owner/operator shall submit an annual emission inventory report or an annual production report, upon request, on forms supplied or approved by the Department.

R. **Source Operations**: Operations at the installation shall be in accordance with statements, representations, procedures and supporting data contained in the initial application, and any supplemental information or application(s) submitted thereafter. Any operations not listed in this permit are subject to all applicable North Dakota Air Pollution Control Rules.

S. **Alterations, Modifications or Changes**: Any alteration, repairing, expansion, or change in the method of operation of the source which results in the emission of an additional type or greater amount of air contaminants or which results in an increase in the ambient concentration of any air contaminant, must be reviewed and approved by the Department prior to the start of such alteration, repairing, expansion or change in the method of operation.

T. **Air Pollution from Internal Combustion Engines**: The permittee shall comply with all applicable requirements of NDAC 33-15-08-01 – Internal Combustion Engine Emissions Restricted.

U. **Recordkeeping**: The owner/operator shall maintain any compliance monitoring records required by this permit or applicable requirements. The owner/operator shall retain records of all required monitoring data and support information for a

period of at least five years from the date of the monitoring sample, measurement, report or application. Support information may include all calibration and maintenance records and all original strip-chart recordings/computer printouts for continuous monitoring instrumentation, and copies of all reports required by the permit.

V. **Nuisance or Danger**: This permit shall in no way authorize the maintenance of a nuisance or a danger to public health or safety.

W. **Malfunction Notification**: The owner/operator shall notify the Department of any malfunction which can be expected to last longer than twenty-four hours and can cause the emission of air contaminants in violation of applicable rules and regulations.

X. **Operation of Air Pollution Control Equipment**: The owner/operator shall maintain and operate all air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions

Y. **Transfer of Permit to Construct**: The holder of a permit to construct may not transfer such permit without prior approval from the Department.

Z. **Right of Entry**: Any duly authorized officer, employee or agent of the North Dakota Department of Health may enter and inspect any property, premise or place at which the source listed in Item I.B of this permit is located at any time for the purpose of ascertaining the state of compliance with the North Dakota Air Pollution Control Rules. The Department may conduct tests and take samples of air contaminants, fuel, processing material, and other materials which affect or may affect emissions of air contaminants from any source. The Department shall have the right to access and copy any records required by the Department's rules and to inspect monitoring equipment located on the premises.

AA. **Other Regulations**: The owner/operator of the source unit(s) described in Item I.B of this permit shall comply with all State and Federal environmental laws and rules. In addition, the owner/operator shall comply with all local burning, fire, zoning, and other applicable ordinances, codes, rules and regulations.

BB. **Permit Issuance**: This permit is issued in reliance upon the accuracy and completeness of the information set forth in the application. Not withstanding the tentative nature of this information, the conditions of this permit herein become, upon the effective date of this permit, enforceable by the Department pursuant to any remedies it now has, or may in the future have, under the North Dakota Air Pollution Control Law, NDCC Chapter 23-25. Each and every condition of this permit is a material part thereof, and is not severable.

CC. **Odor Restrictions**: The owner/operator shall not discharge into the ambient air any objectionable odorous air contaminant which is in excess of the limits established in NDAC 33-15-16.

FOR THE NORTH DAKOTA
DEPARTMENT OF HEALTH

Date_____

By_____
Terry L. O'Clair, P.E.
Director
Division of Air Quality

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AIR QUALITY EFFECTS ANALYSIS
FOR
PERMIT TO CONSTRUCT

Applicant:

Paradigm Energy Partners, LLC
545 E John Carpenter Freeway, Ste 800
Irving, TX 75062

Source Location:

Keene Terminal
SE ¼, SE ¼, Sec. 22, T151N, R96W
McKenzie County, North Dakota

Introduction:

An application was received on January 2, 2015 for the installation and initial operation of a crude oil truck terminal to be known as the Keene Terminal located in McKenzie County. This would be a synthetic minor source. The Permittee has requested to be permitted for two different configurations, where only one of the two would be constructed. This was requested to allow the Permittee flexibility in getting materials. Both configurations have similar emissions and are listed below. The following equipment is to be located at the Keene Terminal:

Emission Unit Description	Emission Unit (EU)	Emission Point (EP)	Air Pollution Control Equipment
Configuration 1 only*: Sixty 400 bbl crude oil tanks	TANK01 through 60	FLARE01	Submerged Fill Pipe, Combustor
Configuration 2 only*: Ten 400 bbl crude oil tanks	TANK01 through 10	FLARE01	Submerged Fill Pipe, Combustor
Configuration 2 only*: Two 20,000 bbl truck unloading tanks (Kb)	UNLD01 through 02	UNLD01 through 02	Submerged Fill Pipe, Internal Floating Roof
Truck Loading	TRUCK01	FLARE01	Vapor Balance Line and Combustor
220,000 bbl shipping tank (Kb)	ST1	ST1	Submerged Fill Pipe, Internal Floating Roof
220,000 bbl shipping tank (Kb)	ST2	ST2	Submerged Fill Pipe, Internal Floating Roof
220,000 bbl receipt tank (Kb)	RT	RT	Submerged Fill Pipe, Internal Floating Roof
220,000 bbl crude oil tank (Kb)	OT01	OT01	Submerged Fill Pipe, Internal Floating Roof

Emission Unit Description	Emission Unit (EU)	Emission Point (EP)	Air Pollution Control Equipment
220,000 bbl crude oil tank (Kb)	OT02	OT02	Submerged Fill Pipe, Internal Floating Roof
220,000 bbl crude oil tank (Kb)	OT03	OT03	Submerged Fill Pipe, Internal Floating Roof
Combustor pilot	FLARE01	FLARE01	None
Emergency generator engine rated at 755hp, fired on NG, propane, LPG, or field gas.	GEN01**	GEN01	Catalytic Converter
Fugitive Emissions	FUG01	FUG01	None

* The facility may either construct the equipment listed in configuration 1 or configuration 2, but may not construct both configurations.

** The potential-to-emit for an emergency generator engine is based on operation no more than 100 hours per year for non-emergency uses [40 CFR 63, Subpart ZZZZ, §63.6640(f)]

To maintain minor source status under the Title V and PSD rules, Keene Terminal will run with the following Operational Limits:

Emission Unit Description	EU	Operational Limit
Configuration 1 only: Sixty 400 bbl crude oil tanks	TANK01 through TANK60	Maximum total throughput of 17,520,000 bbl (735,840,000 gallons) of crude oil per year for all 400 bbl storage tanks (combined).
Configuration 1 only: Truck Loading	TRUCK01	Truck crude oil output into trucks limited to 500,000 bbl (21,000,000 gallons) per year.
Configuration 2 only: Ten 400 bbl crude oil tanks	TANK01 through 10	Maximum total throughput of 2,190,000 bbl (91,980,000 gallons) of crude oil per year for all 400 bbl storage tanks (combined).
Configuration 2 only: Two 20,000 bbl truck unloading tanks (Kb)	UNLD01 through 02	Maximum total throughput of 21,900,000 bbl (919,800,000 gallons) of crude oil per year for all 20,000 bbl storage tanks (combined).
Configuration 2 only: Truck Loading	TRUCK01	Truck crude oil output into trucks limited to 2,190,000 bbl (91,980,000 gallons) per year.
220,000 bbl shipping tank	ST1	Maximum total throughput of 80,300,000 bbl (3,372,600,000 gallons) of crude oil per year.
220,000 bbl shipping tank	ST2	Maximum total throughput of 109,500,000 bbl (4,599,000,000 gallons) of crude oil per year.
220,000 bbl receipt tank	RT	Maximum total throughput of 80,300,000 bbl (3,372,600,000 gallons) of crude oil per year.
220,000 bbl crude oil tank	OT01	Maximum total throughput of 36,500,000 bbl (1,533,000,000 gallons) of crude oil per year.
220,000 bbl crude oil tank	OT02	Maximum total throughput of 36,500,000 bbl (1,533,000,000 gallons) of crude oil per year.
220,000 bbl crude oil tank	OT03	Maximum total throughput of 36,500,000 bbl (1,533,000,000 gallons) of crude oil per year.

Applicable Rules/Allowable Emissions:

A. Chapter 33-15-02 – Ambient Air Quality Standards

The facility must comply with the Ambient Air Quality Standards (AAQS). Other requirements of this chapter include general prohibitions against harming health, causing damage to plants, animals, other property and visible degradation. In addition to these standards, compliance with the Department's Air Toxics Policy is required.

B. Chapter 33-15-03 – Restriction of Visible Air Contaminants

The engine must comply with an opacity limit of 20% except for one six-minute period per hour when 40% opacity is permissible.

C. Chapter 33-15-08 – Control of Air Pollution from Vehicles and Other Internal Combustion Engines

This chapter prohibits the operation of any internal combustion engine which emits any unreasonable and excessive smoke, obnoxious and noxious gases, fumes or vapors. Also prohibited is the removal, alteration or rendering inoperable an air pollution control device that is required by federal law.

D. Chapter 33-15-12 – Standards of Performance for New Stationary Sources

40 CFR 60, Subpart KKK – Standards of Performance for Equipment Leaks of VOC from Onshore Natural Gas Plants (NSPS KKK)

This rule is applicable if the facility is an onshore natural gas processing plant that commences construction, reconstruction or modification after January 20, 1984 and one or before August 23, 2011. This regulation includes, but is not limited to, leak detection and repair, monitoring, recordkeeping and reporting requirements. The new equipment will be constructed after August 23, 2011; therefore Subpart KKK does not apply to the new equipment (see discussion below regarding NSPS Subpart OOOO).

40 CFR 60, Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (NSPS JJJJ)

This subpart applies to owners/operators of spark ignition internal combustion engines that commence construction after June 12, 2006 where the engine is manufactured:

The permittee does not know the specific manufacture dates of the engines; however, it is assumed that the units (which are greater than 500 hp) will be manufactured after July 1, 2007 and will be subject to NSPS JJJJ. Requirements of Subpart JJJJ include, but are not limited to:

- Emission limits for NOx, CO and VOC
- Emission testing every 8,760 hours or 3 years, whichever comes first
- Notification, monitoring, reporting and recordkeeping requirements

40 CFR 60, Subpart OOOO – Standards of Performance for Crude Oil and Natural Gas Transmission and Distribution

The equipment covered by this subpart includes well completions, pneumatic controllers, equipment leaks from natural gas processing plants, sweetening units at natural gas processing plants, reciprocating compressors, centrifugal compressors and storage vessels which are constructed, modified or reconstructed after August 23, 2011. The facility will have fugitive equipment leaks that will be subject to this subpart.

E. Chapter 33-15-22 – Emission Standards for Hazardous Air Pollutants for Source Categories

40 CFR 63, Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (MACT ZZZZ)

This subpart applies to new and existing engines located at major and area sources of HAP emissions. If NSPS JJJJ is applicable to an engine, the requirements of this subpart will be met by meeting the requirements outlined in NSPS JJJJ. If the engine is not subject to Subpart JJJJ, then the engine must meet all applicable requirements of this subpart. These requirements include, but are not limited to: emission limitations, emission testing and notification, monitoring, reporting and recordkeeping requirements. The permittee is responsible for complying with this subpart. EPA, not the Department, is the implementing agency for this subpart.

F. Chapter 33-15-14 – Designated Air Contaminant Sources, Permit to Construct, Minor Source Permit to Operate, Title V Permit to Operate

This chapter requires the permittee to obtain a Permit to Construct for the construction and initial operation of the facility.

G. Chapter 33-15-15 – Prevention of Significant Deterioration

A Prevention of Significant Deterioration (PSD) review could potentially apply to this facility if it is classified as a "major stationary source" under Chapter 33-15-15.

H. Chapter 33-15-16 – Restriction of Odorous Air Contaminants

The owner/operator shall not discharge into the ambient air any objectionable odorous air contaminant which is in excess of the limits established in NDAC 33-15-16.

Non-Applicable Rules:

A. 40 CFR 63, Subpart HH – Emission Standards for Hazardous Air Pollutants from Oil and Gas Production Facilities

This subpart applies to major sources of hazardous air pollutants that operate ethylene glycol or diethylene glycol dehydrators and area and major sources that operate a triethylene glycol dehydrator. The facility is classified as a minor HAP source. For a minor HAP source, the only source that is regulated under Subpart HH is a triethylene glycol dehydrator. The facility will not operate a triethylene glycol dehydrator, so Subpart HH is not applicable to the facility.

Expected Emissions:

Emissions from the 400 bbl tanks and truck loading combustor have a 95% destruction efficiency.

The following table illustrates the expected emissions from the proposed equipment to be at the facility:

Configuration 1:

Emission Unit Description	EU	PM/ $PM_{2.5}$/PM_{10} (tpy)	NO_x (tpy)	CO (tpy)	SO_2 (tpy)	VOCs (tpy)	HAP (tpy)
Sixty 400 bbl crude oil tanks	TANK01 through 60	--	--	--	--	26.59	0.77
Truck Loading	TRUCK01	--	--	--	--	2.74	0.06
Six 220,000 bbl tanks & truck landing	ST1-2, RT, OT01-03	--	--	--	--	68.68	1.99
Combustor pilot	FLARE01	0.39	5.07	4.26	0.03	0.28	<0.01
Natural gas-fired emergency generator engine rated at 755hp	GEN01	0.02	1.96	1.79	<0.01	0.06	0.04
Fugitive Emissions	FUG01	--	--	--	--	1.27	0.04
Total Emissions		**0.41**	**7.03**	**6.05**	**0.03**	**99.62**	**2.9**

Emission Unit Description	EU	BTEX* (tpy)	Formaldehyde (tpy)	Other HAPs (tpy)
Sixty 400 bbl crude oil tanks	TANK01 through 60	0.37	--	0.40
Six 220,000 bbl tanks & truck landing	ST1-2, RT, OT01-03	0.49	--	0.85
Combustor pilot	FLARE01	3.43×10^{-5}	4.68×10^{-4}	0.011
Emergency generator engine rated at 755hp	GEN01	1.5×10^{-3}	2.65×10^{-2}	5.61×10^{-3}
Fugitive Emissions	FUG01	1.78×10^{-2}	--	1.91×10^{-2}
Total (Individual HAPs)		**0.88**	**0.03**	**1.36**
Total Combined HAPs		**2.27**		

* Includes total benzene, toluene, ethylbenzene and xylene (BTEX) compounds.

Configuration 2:

Emission Unit Description	EU	PM/ $PM_{2.5}$/PM_{10} (tpy)	NO_x (tpy)	CO (tpy)	SO_2 (tpy)	VOCs (tpy)	HAP (tpy)
Ten 400 bbl crude oil tanks	TANK01 through 10	--	--	--	--	3.61	0.11
Two 20,000 bbl tanks	UNLD01 through 02	--	--	--	--	8.79	
Truck Loading	TRUCK01	--	--	--	--	12.01	0.27
Six 220,000 bbl tanks & truck landing	ST1-2, RT, OT01-03	--	--	--	--	77.94	2.26
Combustor pilot	FLARE01	0.05	0.62	0.52	<0.01	0.03	0.018
Emergency generator engine rated at 755hp	GEN01	0.02	1.96	1.79	<0.01	0.06	0.039
Fugitive Emissions	FUG01	--	--	--	--	1.27	0.04
Total Emissions		**0.07**	**2.58**	**2.31**	**<0.01**	**94.91**	**2.7**

Emission Unit Description	EU	BTEX* (tpy)	Formaldehyde (tpy)	Other HAPs (tpy)
Ten 400 bbl crude oil tanks	TANK01 through 10	0.11	--	--
Two 20,000 bbl tanks	UNLD01 through 02	1.90	--	--
Six 220,000 bbl tanks & truck landing	ST1-2, RT, OT01-03	0.49	--	--
Combustor pilot	FLARE01	3.43×10^{-5}	4.68×10^{-4}	0.011
Emergency generator engine rated at 755hp	GEN01	1.5×10^{-3}	2.65×10^{-2}	5.61×10^{-3}
Fugitive Emissions	FUG01	1.08×10^{-2}	--	1.91×10^{-2}
Total (Individual HAPs)		**2.53**	**0.03**	**0.036**
Total Combined HAPs		**2.60**		

* Includes total benzene, toluene, ethylbenzene and xylene (BTEX) compounds.

Expected Compliance Status:

A. Chapter 33-15-02 – Ambient Air Quality Standards
Based on the expected emissions, compliance with the AAQS is expected. Based on the October 6, 2014 Department memorandum, *Criteria Pollutant Modeling Requirements for a Permit to Construct,* modeling is not required to demonstrate compliance with the AAQS if NO_x and SO_2 emissions are less than 40 tons/year, PM_{10} emissions are less than 15 tons/year and $PM_{2.5}$ emissions are less than 10 tons/year. Based upon the level of air toxics emissions, compliance with the Air Toxics Policy is expected.

B. Chapter 33-15-03 – Restriction of Visible Air Contaminants

Since the engine will be fired on gas, visible air contaminants are expected to be well below the 20% opacity limit established by this chapter.

C. Chapter 33-15-08 – Control of Air Pollution from Vehicles and Other Internal Combustion Engines

Based on experience with similar sources, the facility is expected to comply with all applicable requirements of this chapter.

D. Chapter 33-15-12 – Standards of Performance for New Stationary Sources

The facility is expected to comply with the applicable requirements of Subpart Dc - Standards of Performance for Small Industrial – Commercial – Institutional Steam Generating Units and Subpart OOOO - Standards of Performance for Crude Oil and Natural Gas Transmission and Distribution

The facility may be subject to Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines depending on the manufacture date of the engines to be installed.

The six 220,000 bbl tanks and the two 20,000 bbl tanks of Configuration 2 are greater than approximately 471 barrels and are subject to 40 CFR 60 (NSPS) Subpart Kb. An internal floating roof is an acceptable method to use to comply with Subpart Kb. The other tanks are not subject to the control equipment requirements of NSPS Subpart Kb due to the size of the tanks but may be subject to Subpart OOOO.

E. Chapter 33-15-14 – Designated Air Contaminant Sources, Permit to Construct, Minor Source Permit to Operate, Title V Permit to Operate

The facility has met all requirements necessary to obtain a Permit to Construct. Based on the expected emissions, the source will be a minor source under the Title V program because the potential to emit for all criteria pollutants remain under 100 tons/year and the potential to emit for HAPs remain under 10 tons/year of any individual HAP and under 25 tons of all combined HAPs.

F. Chapter 33-15-15 – Prevention of Significant Deterioration

The facility is subject to a 100 tons/year PSD major source threshold since the facility has a crude oil storage capacity greater than 300,000 barrels. Since the potential to emit for all pollutants remain under 100 tons/year, a PSD review is not required.

G. Chapter 33-15-16 – Restriction of Odorous Air Contaminants

Based on experience with similar sources, the facility is expected to comply with this chapter.

H. 40 CFR 63, Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

The engine appears to be subject to requirements under this subpart. EPA Region 8, not the Department, is the implementing and enforcement authority. All required documentation must be submitted to EPA Region 8.

Conclusions and Recommendations:

The facility is expected to comply with the applicable rules. It is recommended that a Permit to Construct be issued to Paradigm Energy Partners, LLC for the construction the Keene Terminal in McKenzie County. A 30-day public comment period is required prior to permit issuance.

Date of Analysis: February 18, 2015

Analysis By:

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Division of Air Quality

RMK:saj
Attach: Draft Permit to Construct
Permit Application